

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re Application of:**

David R. Hembree

**Serial No.:** Not yet assigned

**Filed:** March 3, 2004

**For:** CHIP ON BOARD WITH HEAT SINK  
ATTACHMENT AND ASSEMBLY

**Examiner:** Unknown

**Group Art Unit:** Unknown

**Attorney Docket No.:** 2269-3592.10US  
(97-0321.10/US)

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**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

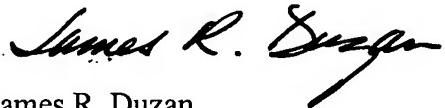
The present application is a divisional of application Serial No. 09/834,297, filed April 12, 2001, pending, which is a continuation of application Serial No. 09/510,894, filed February 23, 2000, now U.S. Patent 6,229,204 B1, issued May 8, 2001, which is a divisional of application Serial No. 09/146,945, filed September 3, 1998, now U.S. Patent 6,117,797, issued September 12, 2000.

Pursuant to M.P.E.P. 2001.06(b), the Examiner is respectfully requested to consider the information of record in the prior applications, and to confirm in the first Office Action on the merits that such art has in fact been reviewed. A PTO-1449 or PTO/SB/08 form listing all of the information of record in the prior applications is enclosed herewith.

**Atty. Docket No.: 3592.10US (97-0321.10/US)**

This Information Disclosure Statement is filed within three (3) months of the filing date of the above-identified application, and no certification pursuant to 37 C.F.R. § 1.97(c) or a fee pursuant to 37 C.F.R. 1.17(p) is required.

Respectfully submitted,



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Date: March 3, 2004

JRD/sls:djp

Enclosures: Form PTO-1449 or PTO/SB/08

Document in ProLaw

Form PTO-1449  INFORMATION DISCLOSURE CITATION IN AN APPLICATION  (Use several sheets if necessary)		Docket Number (Optional) <b>3592.10US (97-0321.10/US)</b>	Application Number <b>Not yet assigned</b>
		Applicant <b>David R. Hembree</b>	
		Filing Date <b>March 3, 2004</b>	Group Art Unit <b>Unknown</b>

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	4,024,570	05/1977	Hartmann et al.			
	4,059,467	11/1977	Mancke et al.			
	4,059,708	11/1977	Heiss, Jr. et al.			
	4,081,825	03/1978	Koopman et al.			
	4,143,456	03/1979	Inoue			
	4,264,917	04/1981	Ugon			
	4,300,153	11/1981	Hayakawa et al.			
	4,323,914	04/1982	Berndlmaier et al.			
	4,358,552	11/1982	Shinohara et al.			
	4,507,675	03/1985	Fujii et al.			
	4,602,678	07/1986	Fick			
	4,628,406	12/1986	Smith et al.			

**FOREIGN PATENT DOCUMENTS**

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
	52-77684	06/1977	Japan				
	55-128835	10/1980	Japan				
	56-4241	01/1981	Japan				
	60-94744	05/1985	Japan				
	60-178651	09/1985	Japan				

**OTHER DOCUMENTS**

(Including Author, Title, Date, Pertinent Pages, Etc.)

	Crum, <i>Trends in Advanced Component Technologies</i> , Electronic Packaging & Production (January 1998) pages 48-53.
	Lawing, <i>Vacuum Dispensing of Encapsulants for μBGA Manufacturing</i> , Electronic Packaging & Production (February 1998 ), pages 87-91.
	Markstein, <i>Cooling Techniques for Today's Electronics</i> , Electronic Packaging & Production (November 1997), pages 78-82.

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**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	4,642,671	02/1987	Rohsler et al.			
	4,801,998	01/1989	Okuaki			
	4,862,245	08/1989	Pashby et al.			
	4,873,615	10/1989	Grabbe			
	4,931,852	06/1990	Brown et al.			
	4,942,140	07/1990	Ootsuki et al.			
	4,961,107	10/1990	Geist et al.			
	4,984,059	01/1991	Kubota et al.			
	5,051,275	09/1991	Wong			
	5,071,787	12/1991	Mori et al.			
	5,081,067	01/1992	Shimizu et al.			
	5,101,465	03/1992	Murphy			
	5,108,955	04/1992	Ishida et al.			

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	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
	62-109326	05/1987	Japan				
	62-115834	05/1987	Japan				
	62-261133	11/1987	Japan				
	2-306639	12/1990	Japan				

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		Smith, <i>Packaging to Beat the Heat</i> , Semiconductor International (November 1997), pages 73-76.
		<i>Die Attach Products</i> , Johnson Matthey Electronics, Product Data (07/01/94), 6 pages.
		<i>Product Bulletin</i> , Dexter Electronic Materials Division (undated), 2 pages.

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**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,120,665	06/1992	Tsukagoshi et al.			
	5,144,747	09/1992	Eichelberger			
	5,173,764	12/1992	Higgins, III			
	5,175,613	12/1992	Barker, III et al.			
	5,182,173	01/1993	Swei			
	5,184,208	02/1993	Sakuta et al.			
	5,194,930	03/1993	Papathomas et al.			
	5,201,866	04/1993	Mok			
	5,218,759	06/1993	Juskey et al.			
	5,227,663	07/1993	Patil et al.			
	5,233,220	08/1993	Lamson et al.			
	5,239,200	08/1993	Messina et al.			
	5,249,101	09/1993	Frey et al.			
	5,252,853	10/1993	Michii			

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	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
	4-157758	05/1992	Japan				
	6-252299	09/1994	Japan				
	522563	09/1992	Europe				

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<b>U.S. PATENT DOCUMENTS</b>						
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	5,286,679	02/1994	Farnworth et al.			
	5,289,346	02/1994	Carey et al.			
	5,291,064	03/1994	Kurokawa			
	5,304,842	04/1994	Farnworth et al.			
	5,311,060	05/1994	Rostoker et al.			
	5,344,795	09/1994	Hashemi et al.			
	5,358,598	10/1994	Chiu			
	5,358,904	10/1994	Murakami et al.			
	5,358,906	10/1994	Lee			
	5,371,044	12/1994	Yoshida et al.			
	5,378,924	01/1995	Liang			
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DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
					YES	NO
<b>OTHER DOCUMENTS</b> <span style="float: right; font-size: small;">(Including Author, Title, Date, Pertinent Pages, Etc.)</span>						
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	5,379,191	01/1995	Carey et al.			
	5,385,869	01/1995	Liu et al.			
	5,387,554	02/1995	Liang			
	5,394,303	02/1995	Yamaji			
	5,396,403	03/1995	Patel			
	5,432,127	07/1995	Lamson et al.			
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	5,434,105	07/1995	Liou			
	5,436,203	07/1995	Lin			

## FOREIGN PATENT DOCUMENTS

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	5,438,216	08/1995	Juskey et al.			
	5,441,684	08/1995	Lee			
	5,450,283	09/1995	Lin et al.			
	5,455,200	10/1995	Bigler et al.			
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	5,461,255	10/1995	Chan et al.			
	5,468,995	11/1995	Higgins, III			
	5,477,082	12/1995	Buckley, III et al.			
	5,488,254	01/1996	Nishimura et al.			
	5,489,538	02/1996	Rostoker et al.			
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	5,541,446	07/1996	Kiersc			

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	5,552,635	09/1996	Kim et al.			
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	5,594,282	01/1997	Otsuki			
	5,596,231	01/1997	Combs			
	5,598,034	01/1997	Wakefield			
	5,604,376	02/1997	Hamburgen et al.			
	5,610,442	03/1997	Schneider et al.			
	5,641,997	06/1997	Ohta et al.			
	5,652,461	07/1997	Ootsuki et al.			
	5,656,857	08/1997	Kishita			
	5,659,952	08/1997	Kovac et al.			
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	5,681,757	10/1997	Hayes			
	5,701,034	12/1997	Marrs			
	5,705,851	01/1998	Mostafazadeh et al.			
	5,891,753	04/1999	Akram			
	5,898,571	04/1999	Mertol			
	5,905,638	05/1999	MacDonald, Jr. et al.			
	5,909,056	06/1999	Mertol			
	5,931,222	08/1999	Toy et al.			
	5,969,947	10/1999	Johnson et al.			
	6,081,027	06/2000	Akram			

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	6,251,707	06/2001	Bernier et al.			
	6,263,566	07/2001	Hembree et al.			
	6,432,497	08/2002	Bunyan			
	6,432,511	08/2002	Davis et al.			
	6,432,840	08/2002	Hembree			
	6,451,709	09/2002	Hembree			
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	6,534,859	03/2003	Shim et al.			
	6,596,565	07/2003	Hembree			
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